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| 10/692,183      | 10/23/2003  | Minoru Masuda        | 501/41430/96        | 8433             |

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EXAMINER

JOYNER, KEVIN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1744

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/692,183 | <b>Applicant(s)</b><br>MASUDA ET AL. |  |
|                              | <b>Examiner</b><br>Kevin C. Joyner   | <b>Art Unit</b><br>1744              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/15/2003, 05/24/2004</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "one of said drive rollers" in lines 5 and 12. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination the limitation will read "of said drive roller."

Claim 5 recites the limitations "said engaging unit", "the perimeter", "said flywheel" and "said lifting rod" in lines 2, 3, 4, and 14 respectively. There is insufficient antecedent basis for this limitation in the claim. The claim is written in a manner as though it is intended to depend upon claim 4 instead of claim 1. For purposes of examination, the examiner will read the claim as though it is dependant upon claim 4.

Claim 6 recites the limitation "said actuation rod" in lines 6 and 8. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination the examiner will read the claim as though it is referring to "said actuation pin."

Claim 7 recites the limitation "said deceleration rotary shaft" in line 4. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the examiner will read the limitation as "a deceleration shaft."

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view Varner (U.S. Patent No. 3,604,037).

Concerning claim 1, Masuda discloses a rotary belt sterilizer comprising: a drive roller (referenced as a pulley (40)) arranged to rotate in synchronization with running of a sterilized rotary belt (as disclosed in paragraph 22); an applicator roller (referenced as a cleaning member (6) in drawing 1), for the sterilizing solution configured to apply a sterilizing solution to said sterilized rotary belt (paragraph 21); a switching device for the applicator roller (the 1V pulley (38), 2V pulley (40), V belt (42), 1<sup>st</sup>-6<sup>th</sup> moderation gears (labeled 46, 48, 50, 52, 54, and 55 respectively), and the revolving shaft as disclosed in paragraph 22, is a switching device), arranged to contact said applicator roller with said sterilized rotary belt (as disclosed in paragraph 21), and; a supply tray (referenced as a disinfection cistern (22)) for the sterilizing solution that is capable of supplying said sterilizing solution to said applicator roller; and a sterilizing solution supplier (the combination of; the worm (56), worm wheel (58), shaft (64A), core side of the worm wheel (as shown in drawing 8 and disclosed in paragraph 23), antibacterial feed pump

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(30), pin member (67), and antibacterial tank (34), is a sterilizing solution supplier), that is capable of supplying said sterilizing solution to said supply tray from a storage tank for the sterilizing solution per pre-determined rotations of said drive roller.

Masuda does not appear to disclose a switching device that separates said applicator roller from a surface during halts of said drive roller. It is generally known to provide mechanisms to contact and separate applicator rollers from the surface being sterilized. Varner discloses an example of this in using an apparatus for cleaning lanes. The patent further discloses that the apparatus includes a switching device (As broadly defined, the contents of Figures 6, 7, 9, 10, and 11, as well as; the main drive 41, drive wheels 40, terminals A, B, and C; motors 80 and 80'; and solenoids 70 and 70' are considered a switching device.), that separates said applicator rollers (31 and 33) from a surface (column 4, lines 24-28) in order to perform a cleaning task in the most efficient manner possible (column 1 lines 61-63, and 73-75; and column 2 lines 1-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda to include a switching device that separates the applicator roller from its surface during halts as exemplified by Varner in order to reduce the amount of sterilizing solution used with the sterilization apparatus.

Concerning claim 2, Masuda continues to disclose that the drive roller, applicator roller, switching device, supply tray, and sterilizing solution supplier are provided in a casing (referenced as a cleaning device body (4), and disclosed in drawings 1 and 4).

In regards to claim 7, Masuda also discloses that the sterilizing solution supplier includes: a deceleration mechanism containing a worm (56) provided on a deceleration

rotary shaft (64A) and a worm wheel (58) having a flat cum mated with said worm (as broadly defined the core side of the worm wheel as shown in drawing 8 and disclosed in paragraph 23 is a flat cum); a supply pump (30) for the sterilizing solution being actuated from a guide pin (67) that impinges on said flat cum in said deceleration mechanism (as shown in drawing 8); and a storage tank (referenced as an antibacterial tank (34)), for the sterilizing solution arranged in communication with said supply pump (as shown in drawing 4 by the pipe 32).

Concerning claims 8 and 9, Masuda continues to disclose that said applicator roller (referenced as a cleaning member (6)), contacts a: throttle roller (as broadly defined, the pulley 40 is a throttle roller); and a supply roller (referenced as a antibacterial feed zone material (26)) that is partly immersed into said sterilizing solution (24) in said supply tray (as shown in drawing 4) and arranged rotatable therein (as disclosed in paragraph 21).

Concerning claim 10, Masuda also discloses that the supply pump has an inlet unidirectional valve (31), and an outlet unidirectional valve (29) in a flow direction of said sterilizing solution (as disclosed in paragraph 24).

Concerning claim 4, Masuda does not appear to disclose that the switching device includes: a gear provided on a deceleration rotary shaft arranged to rotate/halt in response to rotations/halts of one of said drive rollers; an eccentric gear arranged to detachably mate with said gear; a lifting rod for the applicator arranged to lift said applicator roller up and down in response to rotations/halts of said eccentric gear; a flywheel arranged to rotate/halt in response to rotations/halts of the other of said drive

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rollers; and an engaging unit for the lifting rod arranged to engage with/disengage from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up. Varner is relied upon as set forth in reference to the claims above. Varner further discloses that the switching device contains: a gear (referenced as a worm gear 102) provided on a deceleration rotary shaft (103) arranged to rotate/halt in response to rotations/halts (as disclosed in column 5, lines 32-38) of one of said drive rollers (40); an eccentric gear (100) arranged to detachably mate with said gear (as shown in Figure 10); a lifting rod (74) for the applicator roller arranged to lift said applicator roller up and down (as disclosed in column 4, lines 24-31) in response to rotations/halts of said eccentric gear (100), (As disclosed in column 5 lines 31-37, the drive wheels cause the eccentric gear to rotate/halt in order to automatically regulate the operations performed by the rest of the apparatus. Column 5 lines 40-47 further states that the gear is connected to a footage dial which causes the lifting rod to lift the applicator roller up and down as stated in column 6, paragraph 4. Once the gear turns, it allows the footage dial to act on a predetermined setting and cause the lifting rod to lift the applicator up or down. Therefore, the lifting rod lifts the applicator roller up and down in response to the halts of the eccentric gear.); a flywheel (as broadly defined, the pivotal bracket plate 62' is a flywheel) arranged to rotate/halt in response to rotations/halts to said drive rollers (The flywheel is contacted with the lifting rod, which responds to the drive rollers as disclosed above.); an engaging unit (as shown in figure 7) for the lifting rod that is capable of engaging with/disengaging from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up (as disclosed in column 4,

paragraph 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda to include a switching device comprising of; a gear provided on a decelerations rotary shaft arranged to rotate/halt in response to rotations/halts of one of said drive rollers; an eccentric gear arranged to detachably mate with said gear; a lifting rod for the applicator roller arranged to lift said applicator roller up and down in response to rotations/halts of said eccentric gear; a flywheel arranged to rotate/halt in response to rotations/halts of the other of said drive rollers; and an engaging unit for the lifting rod arranged to engage with/disengage from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up as exemplified by Varner. This would aid in separating and contacting the applicator roller from its surface during rotations/halts and essentially reduce the amount of sterilizing solution used with the sterilization apparatus.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of and Varner (U.S. Patent No. 3,604,037) as applied to claims 1, 2, 4, and 7-10 above, and further in view of Jones (U.S. Patent No. 2,724,493).

Masuda in view of Varner is relied upon as set forth in reference to claims 1, 2, 4, and 7-10 above. Masuda in view of Varner does not appear to disclose that said drive roller is one of a pair of left and right drive rollers normally contacted with said rotary belt. Jones discloses a conveyor belt cleaning arrangement that includes a drive roll that contacts the conveyor belt. The patent further discloses that the drive roll is a pair of left and right drive rolls (as shown in Figure 2, the right drive roll is labeled numeral



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12, while the left drive roll is not numbered), that contact the rotary belt (11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Varner to include a pair of left and right drive rolls that contact the rotary belt in order to support the outer portions of the belt as exemplified by Jones.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of and Varner (U.S. Patent No. 3,604,037) as applied to claims 1, 2, 4 and 7-10 above, and further in view of Farr (U.S. Patent No. 4,633,981).

Masuda in view of Varner is set forth in reference to claims 1, 2, 4 and 7-10 above. Masuda in view of Varner further discloses that the engaging unit includes: An actuation pin (referenced as a plunger (71)) capable of moving axially on the axial center of a rotary shaft of a solenoid (The solenoid (70), which includes a rotary shaft, is used to move the actuation pin in an axial position.); an axial movement converter mechanism (The combination of the pivotal lever, (not numbered) connecting the plunger and the grooved ring, and the spring is an axial movement converter mechanism.), configured to move said actuation pin axially in response to movement of said weight toward the perimeter (column 4, lines 27-35); a vertical movement converter mechanism (A combination of the second rocker arm (76) and the fixed rotatable shaft (75) is a vertical movement converter mechanism.), configured to convert axial movement of said actuation pin into vertical movement (column 4, lines 33-37); and an engagement hook (referenced as a cam (77)), configured to complete preparation of

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engagement with said lifting rod when said vertical movement converter mechanism provides down pressure and disengage from said lifting rod when said vertical movement converter mechanism releases pressure (column 4, lines 30-37). Masuda in view of Varner does not appear to disclose that the engaging unit includes; a weight movable toward the perimeter in response to a centrifugal force caused by rotations of said flywheel. It is generally known to use a flywheel with weights to move other mechanisms in an axial direction. In one example, Farr discloses a rotary flywheel skid sensor apparatus that includes a weight (30) movable toward the perimeter in response to a centrifugal force caused by rotations of a flywheel (column 3, lines 41-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Varner to include a weight movable to the perimeter in response to a centrifugal force caused by rotations of a flywheel in order to move a mechanism axially as exemplified by Farr.

Concerning claim 6, Masuda in view of Varner further discloses that said axial movement converter mechanism includes: a pivotal lever (The pivotal lever is not numbered but is shown in Figure 6 between the spring and the plunger.) having a lever end and capable of pivoting along the axis of said flywheel in response to movement of said weight toward the perimeter to press said lever end against an end of said actuation pin; and a spring means (72) capable of normally springing said actuation pin to release pressure applied on said engagement hook.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of and Varner (U.S. Patent No. 3,604,037) as applied to claims 1, 2, 4, and 7-10 above, and further in view of Veloz (U.S. Patent No. 3,550,782).

Masuda in view of Varner is relied upon as set forth in reference to claims 1, 2, and 7-10 above. Masuda in view of Varner further discloses that the storage tank (34) has a unidirectional valve at an aperture thereof that is capable of attaching to another, and that said valve is opened on attachment and closed on detachment to another item (as disclosed at the bottom of paragraph 21). Masuda in view of Varner does not appear to disclose that the storage tank is detachably attached to said casing and that said casing has a unidirectional valve that is capable of attaching to another. Veloz discloses a water sterilization apparatus that includes a storage tank and a casing. The patent further states that the storage tank (18) is detachably attached to said casing (referenced as a housing 24), and that said casing has a unidirectional valve (Although it is not specifically stated, it is inherent to one of ordinary skill in the art that a unidirectional valve is a commonly used valve in order to eliminate any possible leaking.) that is capable of attaching to another (as shown in Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Varner to include a storage tank that is detachably attached to said casing and that said casing has valve that is capable of attaching to another in order to detach the storage tank from the casing and refill the tank with a sterilizing solution as shown by Veloz.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCJ

  
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SUPERVISORY PATENT EXAMINER